A role-oriented content-based filtering approach: personalized enterprise architecture management perspective

Abstract

In the content filtering-based personalized recommender systems, most of the existing approaches concentrate on finding out similarities between users' profiles and product items under the situations where a user usually plays a single role and his/her interests persist identical on long term basis. The existing approaches argue to resolve the issues of cold-start significantly while achieving an adequate level of personalized recommendation accuracy by measuring precision and recall. However, we investigated that the existing approaches have not been significantly applied in the context where a user may play multiple roles in a system simultaneously or may change his/her role overtime in order to navigate the resources in distinct authorized domains. The example of such systems is enterprise architecture management systems, or e-Commerce applications. In the scenario of existing approaches, the users need to create very different profiles (preferences and interests) based on their multiple /changing roles; if not, then their previous information is either lost or not utilized. Consequently, the problem of cold-start appears once again as well as the precision and recall accuracy is affected negatively. In order to resolve this issue, we propose an ontology-driven Domain-based Filtering (DBF) approach focusing on the way users' profiles are obtained and maintained over time. We performed a number of experiments by considering enterprise architecture management aspect and observed that our approach performs better compared with existing content filtering-based techniques.